REMARKS/ARGUMENTS

Claims 1-18 are pending in this application. In response to the present Office Action, claims 1-4 and 17-18 are canceled without prejudice or disclaimer. Additionally, claim 5 is re-written in independent form. No new matter is added by any of the claim amendments. Upon entry of this response, claims 5-16 as amended will be pending in this application. Reconsideration of the application is respectfully requested.

Rejections Under 35 U.S.C. §103

Claims 1 to 5, 8, 10, 13 and 15-18 are rejected on pp. 2-3 of the Office Action under 35 USC 103 as being allegedly 'obvious' over Published U.S. Patent Application No. 2002/0179000 of Lee et al. Further to the above, dependent claims 6, 7, 9, 11, 12 and 14 are rejected under 35 USC 103 over the identical reference for the reasons set forth on p. 3 of the Office Action. These rejections are respectfully traversed.

In response to the Office Action as noted above, *inter alia,* claims 1-4 have been canceled and claim 5 is re-written to include the subject matter of claim 1 from which the claim originally depended. As now constituted, claims 5 and 10 are the only claims written in independent form. These claims are believed to distinguish applicants' claimed process over the disclosure contained in the published application of Lee et al. for the reasons presented below.

The process as recited in, e.g., independent claims 5 & 10 has, as its purpose, improving the properties, for example, the electromagnetic, optical and electro optical properties, of a ferroelectric material, as well as serving as a means for overcoming the limitation on the size of single crystals and the uniformity otherwise required of ingredient(s) needed in growing such single crystals. As taught in the present specification, with use of the claimed method the property of a ferroelectric ceramic compound or single crystal thereof produced thereby depends on the starting materials used in the method as well as the actual process steps used in preparing the material.

According to amended Claim 5, the composition of the resultant ceramic compound is characterized by the formula 1. As described in detail in applicants' specification, when a ceramic compound having the composition of formula 1 is grown to form a single crystal, the crystal is capable of demonstrating a high electromechanical coupling coefficient, high

piezoelectricity, high electro optical coefficient and improved light transmittance.

Further to the above the process for preparing a ferroelectric ceramic compound as set forth in amended Claim 5, as well as that recited in claim 10, contributes to the uniformity of the resultant composition as well as the improvement of the aforementioned ferroelectric property of a single crystal which is grown from the ceramic compound. This aspect is also fully described in the detailed description of the claimed method contained in the present specification.

In contrast to the method recited in applicants' claims, the Lee et al reference, i.e. US Patent Publication No. 2002/0179000, relates to a method for growing single crystals of Perovskite Oxide. Lee et al basically adopts Solid-State Single Crystal Growth (SSCG) as a method for growing single crystals, in which method the single crystal growing process is executed with both a seed single crystal and the polycrystal maintaining their solid state. Furthermore, the object to be solved by Lee et al is controlling the heating process in the SSCG, so that while abnormal grain growths are induced in an interface between the polycrystal and the seed single crystal, abnormal grain growths are repressed inside the polycrystal (See paragraph [0016], on page 2 of Lee et al).

Lee et al discloses that the abnormal grain growth is repressed inside the polycrystal and is induced at the interface between the seed single crystal and polycrystal by the composition changes of the powders, the formation of temperature gradients or the local additions of additives, etc. to grow single crystals having the same structure as the seed single crystal inside the polycrystal (See paragraph [0039], page 3 of Lee et al).

Applicants respectfully contend that neither the method of (amended) claim 5, nor that recited in claim 10, would be obvious to one having ordinary skill in this field of art in view of the fact that the presently claimed method and Lee et al are each directed to different technical subject matter. Furthermore, the problem they are each designed to solve and, as a result, their respective technical focus are each different from the other.

With respect to the aforementioned distinctions in subject matter, while the presently claimed method relates to the preparation of a ferroelectric ceramic compound having a certain specified composition (Claims 5 to 9) and to the preparation of a ferroelectric single crystal (Claims 10 to 16) from the ceramic compound produced by the method referred to as Liquid-State Single Crystal Growth, Lee et al relates, in contrast, to growing single crystals by the

method known as Solid-State Single Crystal Growth.

Further, with respect to the differences in the objects focused on, the object of the presently claimed method is to improve the properties of a ferroelectric material and to expand the range of its usage by reducing the limitation on size of single crystal and uniformity of ingredient in growing single crystal. In contrast, however the object to be solved by Lee et al is controlling the heating process in the SSCG, so that while abnormal grain growths are induced in an interface between the polycrystal and the seed single crystal, abnormal grain growths are repressed inside the polycrystal.

As a basis for rejecting the claims, the Examiner notes in the Office Action that Lee et al disclose a similar composition of ceramic compound and a similar heating temperature to that taught for use in the presently claimed method. However, the technical effects of these factors are quite different from each other in the two cases. That is, in the case of the presently claimed method, the composition of the ceramic compound (or addition of additives) and the control of temperature during the preparation of ceramic compound are intended to improve the property of the ferroelectric material and/or uniformity of ingredient. In contrast, in Lee et al. the change of composition of the ceramic composition and formation of temperature gradient is introduced so as to control the abnormal grain growth between the seed single crystal and the polycrystal, and inside the polycrystal.

In summary, therefore, the presently claimed method is clearly directed to a different technical subject than Lee et al., and it solves a different problem than that solved by the reference in a different way, which clearly demonstrates the non-obviousness of applicants' method as claimed over the disclosure contained in Lee et al.

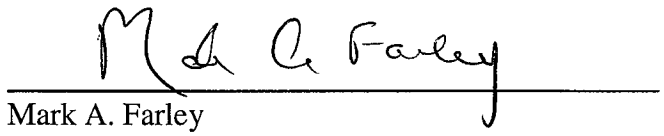
Still further, because Lee et al does not disclose any clue, embodiment or experimental results demonstrating or suggesting that the change in composition of the ceramic compound would affect the properties of a ferroelectric material, the composition difference between the present invention and Lee et al should not be treated as being readily conceivable by one of ordinary skill in the art, particularly when it is considered that the composition of ceramic compound in the present invention is precisely and carefully determined with a view to improving ferroelectric material properties.

For all of the reasons presented above, therefore, the Examiner is respectfully requested to reconsider and withdraw the §103 rejections of applicants' claims 5 and 10. Moreover, since

the remaining claims all depend from one or the other of these claims and, as such, contain all of the limitations recited in their respective 'parent' claim, the dependent claims are believed to also be distinguishable for the same reasons as the independent claims.

THIS CORRESPONDENCE IS BEING SUBMITTED ELECTRONICALLY THROUGH THE PATENT AND TRADEMARK OFFICE EFS FILING SYSTEM ON April 3, 2008.

Respectfully submitted,



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